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EXAMINER	
YANG, CLARA I	

ART UNIT	PAPER NUMBER
2635	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/687,146	JALKANEN ET AL.	
	Examiner	Art Unit	
	Clara Yang	2635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *8-13* is/are allowed.

6)☒ Claim(s) *1,3-7,14-19,21,22 and 24-28* is/are rejected.

7)☒ Claim(s) *2,20 and 23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments, see pages 12-16, filed on 31 October 2005, with respect to claims 2, 8-13, 20, and 23 have been fully considered and are persuasive. The 35 USC § 103(a) rejection of the claims has been withdrawn.

2. Applicant's arguments filed on 31 October 2005 have been fully considered but they are not persuasive. The applicant presents two arguments. The first argument (see pages 9-11) concerns the new limitation added to claims 1, 8, 14, and 22 that requires the adjustment of power consumption to include "reducing the power consumption of the RFID reader when no change in the context of the mobile terminal is determined." The second argument (see page 11) concerns the interpretation of the limitation "change in the context of the mobile terminal".

Regarding the first argument that "neither Landt nor Turner, individually or in combination, teach or suggest reducing the power consumption of an RFID reader when no change in the context of the mobile terminal is determined" and that Landt's motion sensor only prevents automatic reading/scanning of tags/symbols when Landt's RFID reader is stationary (i.e., no change in the reader's context), thereby "resulting in no change in the power consumption of the RFID reader", the examiner respectfully disagrees with the applicant. In the previous rejection of claims 3, 5, 24, and 26, the examiner defined Landt's RFID reader to be "disabled" when it is no longer enabled to interrogate. In other words, Landt's RFID reader 100 may still be consuming power even though it is no longer interrogating. However, one of ordinary skill in the art recognizes that Landt's RFID reader 100 consumes less power when it is no longer interrogating tags than when it is interrogating tags. Consequently, even when the motion sensor "merely does not automatically enable reading/scanning tags/symbols" while

reader 100 is stationary, there is a reduction in power consumption once reader 100 ceases interrogation.

In response to the second argument, the claims fail to define the limitation "change in the context" as a "change in movement". The examiner interprets "context" to mean "setting" or "environment", as defined in the 10th edition of *Merriam-Webster's Collegiate Dictionary*. When Landt's RFID reader 100 is moving or when tags move through its interrogation field, reader 100's setting/environment changes. When Landt's RFID reader becomes stationary, its location/position ceases to change.

Allowable Subject Matter

3. Claims 8-13 are allowed. The prior art of record fails to teach or suggest the method of adjusting the power of a radio frequency identification (RFID) reader associated with a mobile terminal by determining a change in the mobile terminal's context when the detection of RFID tags in the area proximate the mobile terminal changes relative to a prior interrogation, wherein the RFID reader's power consumption is reduced when no change in the context of the mobile terminal is determined.

4. Claims 2, 20, and 23 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 3-7, 14-19, 21, 22, and 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landt (US 6,677,852) in view of Turner et al. (US 5,305,008).

Referring to claims 1 and 22, Landt teaches a mobile radio frequency identification device (RFID) reader 100 (i.e., an RFID reader associated with a mobile terminal), as shown in Figs. 1 and 3, having memory 310 for storing instructions, parameters, data, and at least an operations kernel, which form computer-readable program code portions as called for in claim 22, for processor 304 (see Col. 6, lines 51-67 and Col. 7, lines 1-12) that enable RFID reader 100 to perform the following functions: (a) using a motion sensor to determine RFID reader 100's situation/context (see Col. 6, lines 37-40); and (b) automatically enabling (i.e., adjusting the power consumption of RFID reader 100) based on RFID reader 100's motion sensor detecting movement after RFID reader 100 has been stationary (i.e., a previous context determination) (see Col. 6, lines 37-40). In other words, RFID reader 100's power consumption is adjusted by actuating the reader when motion is detected. Landt also teaches that RFID reader 100 is automatically enabled when motion is detected (see Landt, Col. 6, lines 37-40). In other words,

when RFID reader 100 is stationary (i.e., no change in the reader's context), RFID reader 100 is disabled (i.e., unable to automatically interrogate). When RFID reader 100 is disabled, it is understood that the reader ceases all interrogation, thereby reducing power consumption until motion is detected. Landt, though, is silent on adjusting RFID reader 100's power consumption by altering how often the reader is actuated.

In an analogous art, Turner teaches an RFID interrogator 1, see Figs. 1A, 9 and 16, having an adaptive control block (ACB) 54 that includes microcontroller 88 for: (a) detecting any responses from electronic labels within interrogator 1's communication range after an interrogation (see Col. 4, lines 9-11 and 47-49; Col. 6, lines 34-56; and Col. 14, lines 49-60); (b) determining a change by monitoring the presence of medium frequency components that occur when labels move rapidly within the field of the interrogator (see Col. 21, lines 37-42); and (c) adjusting the power consumption of the interrogator by reducing the duration of the low-power (V_L) period between high-power (V_P) periods when a label is detected to be moving quickly through the interrogator's field or by increasing the duration of the low-power (V_L) period between high-power (V_P) periods when no labels are detected or when a label is moving slowly through the interrogation field (see Col. 14, lines 60-67 and Col. 21, lines 42-51).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Landt's RFID reader 100 as taught by Turner because increasing RFID reader 100's power consumption by making high-power (V_P) periods sufficiently frequent when tags 102 are detected to be moving rapidly through the reader's interrogation field (or when the reader is moving rapidly among tags 102 that are within the reader's interrogation field) provides tags 102 at least one full period to generate its reply, thereby enabling data retrieval from even rapidly moving tags 102 while maintaining the

average interrogator power within the limit set by statutory regulations (see Turner, Col. 14, lines 60-68; Col. 15, lines 1-8 and 11-15; and Col. 21, lines 42-51).

Regarding claims 3, 5, 24, and 26, Landt and Turner teach that RFID reader 100 is automatically enabled when motion is detected (see Landt, Col. 6, lines 37-40). In other words, when RFID reader 100 is stationary (i.e., no change in the reader's context), RFID reader 100 is disabled (i.e., the reader's power consumption is reduced). However, once motion is detected, RFID reader 100 is automatically enabled (i.e., the reader's power consumption is increased), as called for in claims 3 and 24. When RFID reader 100 is disabled, it is understood that the reader ceases all interrogation. Consequently, as called for in claims 5 and 26, Landt and Turner's RFID reader 100 reduces power consumption by ceasing the interrogation of tags 102 until motion is detected.

Regarding claims 4 and 25, as mentioned in the previous rejection of claims 1 and 22, Landt's method, as modified by Turner, includes RFID reader 100 reducing its power consumption by increasing the duration of the low-power (V_L) period between high-power (V_P) periods when no labels are detected or when a label is moving slowly through the interrogation field (see Turner, Fig. 10; Col. 14, lines 60-67; and Col. 21, lines 42-51). Because the intervals between high-power (V_P) periods are shortened only when medium frequency components are produced by a Doppler shift, which indicates the presence of a fast moving label within the interrogation field (see Turner, Col. 14, lines 60-68 and Col. 21, lines 37-51), the absence of medium frequency components indicates no change in the reader's context.

Regarding claims 6 and 27, as mentioned in the previous rejection of claims 1 and 22, Landt's method, as modified by Turner, includes RFID reader 100 increasing its power consumption by reducing the duration of the low-power (V_L) period between high-power (V_P)

periods when a label is detected to be moving quickly through the interrogator's field (see Turner, Fig. 10; Col. 14, lines 60-67; and Col. 21, lines 42-51). Because the intervals between high-power (V_P) periods are shortened only when medium frequency components are produced by a Doppler shift, which indicates the presence of a fast moving label within the interrogation field (see Turner, Col. 14, lines 60-68 and Col. 21, lines 37-51), the presence of medium frequency components indicates a change in the reader's context.

Regarding claims 7 and 28, Landt and Turner's RFID reader 100 operates in a disabled mode when no motion is detected (see Landt, Col. 6, lines 37-40). Once RFID reader 100 is enabled (i.e., motion is detected), the reader operates in two other modes: (1) a low-power mode when tags 102 are outside of the interrogation field or moving slowly within the interrogation field (see Turner, Fig. 10; Col. 14, lines 60-67; and Col. 21, lines 42-51); and (2) a high-power mode when tags 102 are moving quickly within the interrogation field (see Turner, Fig. 10; Col. 14, lines 60-67; and Col. 21, lines 42-51).

Referring to claims 14 and 15, Landt's RFID reader 100, as shown in Fig. 3 and called for in claim 14, comprises: (a) an RFID section formed by antenna 114, transceiver 302, processor 304, and memory 310 (see Col. 6, lines 16-24 and 51-67; and Col. 7, lines 1-12 and 25-30); and (b) processor 304 for determining RFID reader 100's context based upon information received from a distance or motion sensor (see Col. 6, lines 37-40). Landt also teaches that RFID reader 100 is automatically enabled when motion is detected (see Landt, Col. 6, lines 37-40). In other words, when RFID reader 100 is stationary (i.e., no change in the reader's context), RFID reader 100 is disabled (i.e., unable to automatically interrogate). When RFID reader 100 is disabled, it is understood that the reader ceases all interrogation, thereby reducing power consumption until motion is detected. Landt's RFID reader 100, though, lacks at least one controller in

communication with processor 304, wherein the controller adjusts the reader's power consumption based upon the reader's context by altering the reader's interrogation rate (as called for in claim 14). Consequently, Landt is also silent on processor 304 comprising the controller for adjusting the reader's power consumption (as called for in claim 15).

Turner's interrogator 1, as shown in Fig. 1A, includes an RFID reader formed by transmitter 2, antenna 3, receiver 12, decoder 13, and controller 14 (see Col. 6, lines 34-56 and Col. 7, lines 1-3). Per Turner, interrogator 1's ACB 54 (i.e., at least one processor) includes microcontroller 88 that examines the signals produced by converters 86 and 87 for evidence of medium frequency components, wherein the presence of the medium frequency components indicates that a label is moving rapidly through the interrogator's interrogation field (i.e., a change in the interrogator's context) (see Figs. 9 and 16; and Col. 21, lines 37-51). If such signals are found, microcontroller 88 causes baseband processor and controller (BPD) 48 to increase the occurrence of high-power (V_P) periods during a short period to ensure that at least one reply is received from the rapidly moving label (see Col. 21, lines 42-51), thereby adjusting the interrogator's power consumption. Because Turner's ACB 54 includes microcontroller 88 (as called for in claim 15), ACB 54 must be in communication with microcontroller 88 (as called for in claim 14).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Landt's RFID reader 100 as taught by Turner because increasing RFID reader 100's power consumption by making high-power (V_P) periods sufficiently frequent when tags 102 are detected to be moving rapidly through the reader's interrogation field (or when the reader is moving rapidly among tags 102 that are within the reader's interrogation field) provides tags 102 at least one full period to generate its reply,

thereby enabling data retrieval from even rapidly moving tags 102 while maintaining the average interrogator power within the limit set by statutory regulations (see Turner, Col. 14, lines 60-68; Col. 15, lines 1-8 and 11-15; and Col. 21, lines 42-51).

Regarding claims 16 and 17, Landt and Turner teach that RFID reader 100 has a distance (i.e., proximity) or motion sensor to provide RFID reader 100 with information regarding its environment (see Landt, Col. 6, lines 37-40; and Turner, Col. 21, lines 37-42).

Regarding claim 18, Landt's RFID reader 100, as modified by Turner, has BPD 48 for generating the transmitter envelope control (TEC) signal shown in Fig. 10 (see Turner, Col. 21, lines 21-25). BPD 48, which has a microprocessor 60, must have a timer for repeating the interrogation cycle at regular intervals T_R and for ensuring that the time period of a high-level signal T_H is long enough to allow a label to generate and transmit a reply (see Landt, Fig. 13; Col. 14, lines 60-68; Col. 15, lines 11-15; and Col. 21, lines 37-51). BPD 48's timer clearly tracks time between detections of a rapidly moving label (i.e., a change in context) since the intervals T_R are reduced when a tag is moving rapidly through the reader's interrogation field and then increased to its regular interval when no tags are detected or when a tag is moving slowly through the reader's interrogation field.

Regarding claim 19, Landt and Turner's RFID reader 100 includes switch 306, which is used to enable scanner 309 or initiate the interrogation of tags 102 (see Col. 9, lines 43-44). By enabling scanner 309, RFID reader 100's RFID reading section is disabled, thereby adjusting the RFID reading section's power consumption by changing its mode from enabled to disabled.

Regarding claim 21, as explained in the rejection of claim 14, Landt's RFID reader 100's RFID reading section comprises processor 304.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clara Yang whose telephone number is (571) 272-3062. The examiner can normally be reached on 8:30 AM - 7:00 PM, Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (571) 272-3068. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CY
3 January 2006

BRIAN ZIMMERMAN
PRIMARY EXAMINER